

6 March 2003
Application No.09/885,226
Docket: 1065

c.) Remarks

Claims 1-34 are pending in this application. Claims 1, 6, 7, 14, 19, and 20 are currently amended in various particulars as indicated hereinabove.

Claims 1, 2, 6, and 8-13 were rejected as being anticipated by both US6,343,087 and US6,393,171. Claim 1 specifies that the optical element includes a lens. This is not shown by the references.

Claims 3-5 7, and 14-26 were rejected under 35 U.S.C. 103(a) as being unpatentable over US6,343,087 and US6,393,171 in view of "Admitted Prior Art. This rejection is respectfully traversed for the following reasons.

Each of the independent claims requires that the optical element, which is solid phase welded to the mounting structure, includes a lens, a MEMS device, or a Fabry-Perot tunable filter. This is not shown by the references.

Applicants further believe that this claimed invention would not be obvious. The reasoning is that, in the past, the optical elements have been typically connected to the mounting structures by interference fit, epoxy or possibly solder.

Research by the Applicants, however, established that each of these approaches has drawbacks. The interference fit requires high precision components, which are expensive. Moreover, its use can result in damage to the structure or element. Epoxy is probably the easiest to use, but it can lead to long-term reliability problems due to failure or organics outgassing. Finally, solder bonds can degrade with the temperature cycling required to attach multiple components to the bench.

These experiences lead to the use of thermocompression bonding, which can be designed to withstand higher temperatures.

Nothing in the cited patents, US6,343,087 and US6,393,171, or in the specification at page 1, lines 5-7 suggests this solution or the problems. The only

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mention of a lens, for example, in the Office Action was relative to column 5 of US6,393,171. The lens, however, was a fiber lens, what was apparently epoxy bonded.

Nothing would motivate one skilled in the art to solid phase weld a lens, for example, to a mounting structure.

For the forgoing reasons, Applicants believe that the rejections should be withdrawn.

Applicants believe that the present application is in condition for allowance. A Notice of Allowance is respectfully solicited. Should any questions arise, the Examiner is encouraged to contact the undersigned.

Respectfully submitted,

AXSUN TECHNOLOGIES, INC.

By 

J. Grant Houston, Esq.

Registration No.: 35,900

Tel.: (978) 262-0049

Fax: (978) 262-0035

Billerica, Massachusetts 01821
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